related to hearing loss and partial or complete loss of expressive and/or receptive language in stroke or traumatic brain injury. Tens of millions of adults have disorders of hearing and the losses tend to be progressive with age.

In the geriatric population, language and hearing disorders predominate with severity often related directly to general health, social and intellectual function, and independence.

The program in speech pathology and audiology at the John A. Burns School of Medicine is an active participant in the efforts to adapt the delivery of services in speech-language-hearing to today's and tomorrow's health care needs. Part of that effort is to help define and model a system that assures availability, access, and quality of services at the earliest possible moment.

Today we are seeing our roles evolve in support of health care initiatives. Speech-language pathologists and audiologists not only provide independent diagnostic, evaluation, and treatment services, but are becoming consultants in speech-language-hearing. This new role extends the services of the referring party. Speech-language pathologists and audiologists provide the managing physician with diagnostic and evaluative information of value in decision making and preparing treatment plans.

Military Medicine

The Evil Empire Revisited
Operation Provide Hope VI

MAJ Brian Crisp MD

After the fall of the Soviet Union and its subsequent dissolution, U.S. Vice President Al Gore and Russian Prime Minister Viktor Chernomyrdin met and agreed to specific methods by which the U.S. could aid the struggling new nation. Pursuant to and as part of this agreement, the U.S. Army, Pacific (USARPAC) was asked to deliver excess Army medical materiel (in essence, a now obsolete but never used field hospital) to City Hospital No 2 in Vladivostok, Russia, located on the Sea of Japan. This previously *closed* city was considered so secret and of such vital military importance that even bona fide Soviet citizens had to apply for a special permit to visit friends or family members residing there.

The mission was comprised of three phases. In the first phase, team members of the ad hoc Medical Logistics Support Team, or MLST, met at Sagami Army Depot in Japan (where the field hospital was stored) for initial planning. Personnel for this phase from Tripler Army Medical Center included staff family physician MAJ Gary Clark and dentist CPT Chris Evanov. They were met by a host of biomedical repairmen, logistical, supply and engineering specialists, and linguists who were drawn from as far away as Pennsylvania and as close as Camp Zama, Japan. Following the initial planning meeting in Japan, the members traveled to Vladivostok where they inspected City Hospital No 2 and made final plans as to what to bring, where to place it, and how it could best be used. While there, they discovered another hospital in need of American help, the Children's Tuberculosis Hospital. This hospital looks after some of the poorest of Vladivostok's children; kids who not only have TB, but who are typically from unhappy homes—often riddled with alcoholism, neglect, and abuse. These children usually live in the TB Hospital for up to a year and a half while undergoing treatment, in conditions that would bring tears to most adults—as it did to most of our team. After assessing the two hospitals, the team returned to Japan where much of the equipment that would be sent was located—this completed phase I. Phase II consisted of uncrating, inspecting, testing, and repacking all medical equipment to be shipped to Russia. Sixty-two containers of this medical equipment were then loaded onto a cargo ship and transported to Vostochny, the civilian port about two hours north of Vladivostok.

After the equipment arrived, Phase III began: installation, assembly, and use of the donated supplies. On a team of 33, 11 Tripler personnel went to Russia for this phase, including optometrist CPT Patricia Hill, Dr Evanov, and me. The remainder of the team was logistical, biomedical, engineering, laboratory, x-ray, respiratory, and operating-room specialists. As the only physician on the mission, my job was to act as medical advisor and guide. Additionally, I was assigned the responsibility of medical education; that is, I was in charge of the overall hands-on instruction, written instruction, and videotaping of selected medical equipment. And, I was the medical support for our team members in case of illness or injury.

After an overnight stay in Tokyo, I arrived in Vladivostok via Aeroflot—on an aircraft replete with smelly chairs, bad food, and gum on the carpet that sticks to the bottom of your shoes. This was especially poignant after flying out of Tokyo's Haneda airport (probably the cleanest airport in the world), and Toyama airport on Japan's western coast (the second cleanest). Just like the old movies, I was pulled out of a line of passengers when I showed the immigration officers my official American passport and was forced to wait an additional half-hour until I was cleared, ostensibly from Moscow. Old habits die hard.

After getting settled in our home-away-from-home for the next six and a half weeks, I toured the hospital and had a chance to see its operating rooms, intensive care unit, pediatric service, and the various wards. I also viewed the ancillary services, such as x-ray, physical therapy, dentistry, laboratory, and the morgue (a hideous place—right out of your worst childhood nightmares). We quickly went to work locating equipment (one of the hardest jobs), then assembling, checking, rechecking, and finally instructing our Russian counterparts in their use. We also translated instructions into Russian to be attached to the various pieces of equipment. All manner of obstacles were encountered, from the Russian professor who "had 20 years of medical education and could *certainly* put together a bed" (he put it together backward), to various Russian nurses and doctors hoarding equipment they had absolutely no use for, to oxygen wall flow rates that were inappropriately low for some of our anesthesia equipment and precluded their use. The bigger pieces of equipment, such as x-ray or laboratory pieces, were easily distributed to the appropriate personnel, but it was much more difficult for some of the smaller supplies. What would typically transpire was that one or more of the team members would open a *multi-pack*, a roughly 6 x 6 x4-foot container containing a multitude of almost every medical product available. A gaggle of about 8 to 10 Russian nurses and physicians would gather around and *claim* each piece as it was presented and interpreted by the interpreter. As one might expect, however, some medical items defy translation, eg, how do you say "Kirschner wires" or "cerebella support" in Russian? Many boxes had to be opened by the Russian personnel and visually inspected to determine their appropriate destination. After that, piles of equipment would be loaded onto antiquated gurneys and wheeled, we hope, to the right location.

One way or another, the equipment made its way to the appropriate department and was installed. The Russians were instructed in its use and even starred in the instructional videos. Late nights and working weekends saw to it that all translations were completed

before our departure—not a simple task considering the technical nature of medical translation. Through it all, the team worked well together, and our Russian hosts were gracious and helpful. Despite the busy schedule, I was able to scrub in on a laparotomy for peritonitis, confer with their intensivist on several of their cases in the ICU, watch respiratory therapy in the pediatric ward (where several kids in a row used the same nebulizer solution, hose, and mouth piece), and in general observe the day-to-day functioning of this trauma hospital. Vladivostok is a poor, increasingly crime-ridden Mafia-infested town, and many of the cases we saw were related to violence from organized crime or from hitherto unknown poverty. It is sad to think that in some ways the medical needs of the population were better met under the old communist system.

As for our team's health, I was probably overly prepared for calamity, as I didn't use even a fair amount of the medications I brought with me. This was in part due to the so-called Western conditions at the hotel were we stayed, and in part due to the appropriate caution exercised by the team. Safety was constantly emphasized—an important point as the Russians did many things with few or no safety precautions. Our soldiers were advised to let our host nation assistants perform dangerous or unsafe activities. No evacuations were necessary, but could have been arranged if necessary. There was only one trauma—a hand laceration that did not require stitches, and the most worrisome patient was a soldier with new-onset headaches which ultimately resolved but did require short-term narcotics. None of my patients required host nation medical systems, and none required more than I was able to deliver. Certainly, it could have been much worse.

Overall, the mission was a success. An entire Army field hospital with an estimated value of more than $4 million (last valued in 1970—probably worth about twice that in 1990's dollars) was transported and integrated into a Russian trauma hospital with only minor problems. News of the mission was broadcast on several local radio and television stations and made headlines in the local Vladivostok newspapers. We had insight into a Russia that, while rejuvenating, seems to be crumbling even faster. The Russian medical staff is trying to hold together a system that is constantly doing its best to fall apart. No supplies, no money, intermittent electricity, low salaries, and a nonexistent infrastructure all make for a system that is precarious at best. We marvel at the courage and dedication of the professionals who do their best for the sick and injured needing their care in such a system. Boy, do we have it good here!